

CLAIMS

1. A travel motion control apparatus for a hydraulically driven vehicle, comprising:

a hydraulic pump that is driven by a driving motor;

5 a travel motion motor that is driven with pressure oil supplied from the hydraulic pump;

a travel motion control valve that controls a flow rate of the pressure oil supplied from the hydraulic pump to the travel motion motor;

10 a means for operation with which the travel motion control valve is operated;

a means for rotation rate detection that detects a rotation rate of the travel motion motor; and

15 a means for motor over rotation prevention that reduces the rotation rate of the travel motion motor if the means for rotation rate detection detects a rotation rate equal to or higher than a predetermined rotation rate upper limit.

2. A travel motion control apparatus for a hydraulically driven vehicle according to claim 1, wherein:

20 if the rotation rate of the travel motion motor becomes equal to or lower than a predetermined rotation rate lower limit which is at least lower than the rotation rate upper limit while speed reduction control is implemented on the travel motion motor with the means for motor over rotation

prevention, the speed reduction control by the means for motor over rotation prevention is stopped.

3. A travel motion control apparatus for a hydraulically driven vehicle according to claim 1 or claim 5 2, wherein:

the travel motion motor is a variable displacement travel motion motor; and

the travel motion control apparatus includes a means for motor displacement volume control that controls a motor 10 displacement volume in correspondence to a travel pressure at the travel motion motor.

4. A travel motion control apparatus for a hydraulically driven vehicle according to claim 3, wherein:

if the means for rotation rate detection detects a 15 rotation rate equal to or higher than the rotation rate upper limit, the means for motor over rotation prevention increases the displacement volume of the travel motion motor.

5. A travel motion control apparatus for a hydraulically driven vehicle according to claim 4, wherein:

20 the means for motor over rotation prevention increases the displacement volume of the travel motion motor so that the displacement volume of the travel motion motor becomes 40% to 70% of a maximum displacement volume of the travel motion motor.

6. A travel motion control apparatus for a hydraulically driven vehicle according to claim 4 or claim 5, wherein:

if the means for rotation rate detection detects a 5 rotation rate equal to or higher than the rotation rate upper limit, the means for motor over rotation prevention gradually increases the displacement volume of the travel motion motor.

7. A travel motion control apparatus for a hydraulically driven vehicle according to claim 1 or claim 10 2, further comprising:

a variable relief valve that allows a relief pressure of the pressure oil from the travel motion motor to be altered, wherein:

if the means for rotation rate detection detects a 15 rotation rate equal to or higher than the rotation rate upper limit, the means for motor over rotation prevention increases the relief pressure at the variable relief valve.

8. A travel motion control apparatus for a hydraulically driven vehicle according to claim 7, wherein:

20 if the means for rotation rate detection detects a rotation rate equal to or higher than the rotation rate upper limit, the means for motor over rotation prevention gradually increases the relief pressure at the variable relief valve.

9. A hydraulically driven vehicle comprising a travel motion control apparatus according to any of claims 1 through 8.

10. A wheel hydraulic excavator comprising a travel motion control apparatus according to any of claims 1 through 8.